

Naval Education and  
Training Command

NAVEDTRA 12149  
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Training Manual  
(TRAMAN)



# Engineman 2

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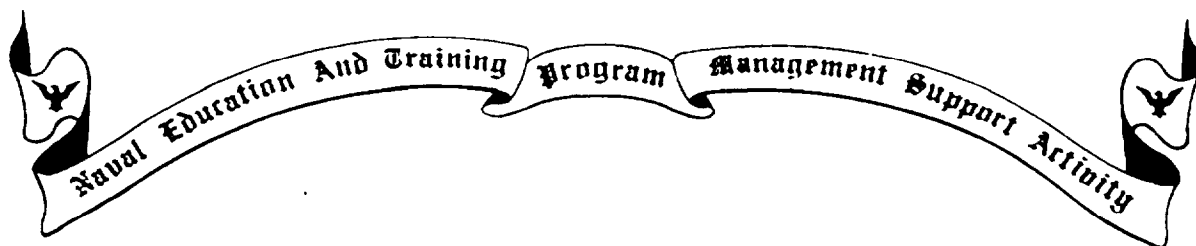


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Although the words “he,” “him,” and “his” are used sparingly in this manual to enhance communication, they are not intended to be gender driven nor to affront or discriminate against anyone reading this text.

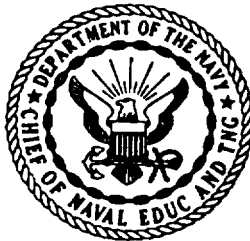
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# ENGINEMAN 2

NAVEDTRA 12149



*1992 Edition Prepared by  
ENC Renato D. Dizon*





# PREFACE

Engineman 2, NAVEDTRA 12149, is a training manual (TRAMAN) which, when combined with its nonresident training course (NRTC), NAVEDTRA 82149, forms a self-study training package that will help the student acquire the theoretical knowledge and operational skills necessary for advancement to Engineman Second Class. Combined with the necessary practical experience and a review of other applicable training manuals, a knowledge of the information in this self-study package will help the student meet advancement requirements.

Designed for individual study, this TRAMAN provides subject matter that relates directly to the occupational qualifications of the Engineman rating. The NRTC provides the usual way the student can satisfy the requirement for completing this TRAMAN. The assignments in the NRTC include supporting questions designed to guide the student through the subject matter of the TRAMAN.

This TRAMAN and the NRTC were prepared by the Naval Education and Training Program Management Support Activity, Pensacola, Florida, for the Chief of Naval Education and Training. Technical assistance was provided by Service Schools Command, Great Lakes; Amphibious Squadron Seven, SIMA Charleston; USS *Frank Cable* (AS-40); and Naval Sea Systems Command.

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# **THE UNITED STATES NAVY**

## **GUARDIAN OF OUR COUNTRY**

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends; the United States Navy exists to make it so.

## **WE SERVE WITH HONOR**

Tradition, valor, and victory are the Navy's heritage from the past. To these may be added dedication, discipline, and vigilance as the watchwords of the present and the future.

At home or on distant stations as we serve with pride, confident in the respect of our country, our shipmates, and our families.

Our responsibilities sober us; our adversities strengthen us.

Service to God and Country is our special privilege. We serve with honor.

## **THE FUTURE OF THE NAVY**

The Navy will always employ new weapons, new techniques, and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war.

Mobility, surprise, dispersal, and offensive power are the keynotes of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

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